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Statement of

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

before the

Committee on Aeronautical and Space Sciences
United States Senate

Mr. Chairman and Members of the Committee:

It is a privilege to be here today to present President Johnson's recommendations for the authorization of funds for the programs of the National Aeronautics and Space Administration for Fiscal Year 1967.

In one important respect, the hearing today on the 1967 Authorization for NASA is sadly different from all those held since its formation in 1958. For the first time in these eight years of NASA's life, Dr. Hugh L. Dryden is not here to testify. Dr. Seamans and I miss his strong support. All in NASA miss his kindness, his genius, and his wise counsel. He had great ability, coupled with a clear vision and understanding of how the strengths of science, technology, engineering, and management could be brought together and could work in unison

within the framework of our evolving Governmental processes, to accomplish the kind of large-scale and imaginative objectives specified in the Space Act. This is one of our basic national needs in many areas, and we have, I believe, in the space program learned how this can be done and demonstrated that as a Nation we can indeed do it.

In this first hearing since Dr. Seamans became Deputy Administrator, I hope you will permit me to say that in him the Nation has a man eminently qualified to carry this responsibility. I am glad that the statements of members of the Committee at the recent hearings on his nomination, and the prompt and unanimous action of the Committee and the Senate in confirming him, show that the Congress fully shares the confidence the President has expressed.

As Dr. Seamans explained at the hearing on his nomination, he and I have decided to consolidate our management functions into a single strengthened unit -- the Office of the Administrator -- in which he will serve both as general manager of the agency and Acting Administrator in my absence. We will both rely on a single central staff in areas that require a NASA-wide over-view, such as Public Affairs, International Affairs, Administration, and so forth. In such

matters, this same staff will also serve the four Associate Administrators. Under this arrangement, we are looking to these four Associate Administrators, who manage program offices, to play an even stronger role in solving the central management problems of the agency than they have before. I believe our recent accomplishments show that in George Mueller, Homer Newell, Mac Adams, and Edmond Buckley, and the men who work with them, we have an excellent team of managers to conduct the agency's operations.

In considering the President's requests for NASA for FY 1967, it may be helpful to start with a brief assessment of where we now stand and how we look at the future. Dr. Seamans and the program managers will present the 1967 Budget in considerable detail, but since this Committee is very familiar with our programs, we will try to avoid telling you things that you already know.

First and foremost, we have had a very good year. We can report that in spite of serious limits on our resources, the space program has clearly moved, in the past year, from plans and promise to deeds and demonstration.

For example, in manned space flight we have demonstrated with Gemini the feasibility of all the basic requirements for

complex manned operations in space, including those for a manned lunar landing. Specifically, we have demonstrated:

-- man's ability to carry into space the essentials of an environment within which he can operate usefully for long periods of time - at least fourteen days - and his ability to function outside his spacecraft for limited times, and

-- the precise guidance and control required for space rendezvous and docking maneuvers.

Most important of all, we have demonstrated the efficiency which can be achieved from a proper implementation of the concept of a complex fully engineered operational system, which incorporates large and intricate but necessarily reliable automated machines and equipment; joins with this machine capacity the capabilities of thousands of highly trained personnel all around the world; and ties both together with a network feeding into and out of a central mission control system capable of making real-time decisions on matters of the greatest complexity on which the success or failure of the mission depends.

In unmanned operations using deep-space probes, we have returned to Earth and delivered to the Nation's scientists and engineers the first high-resolution close-up photographs of the Moon, with Ranger, and the first and only close-up pictures of Mars, with Mariner. These long-duration flights have demonstrated that we can build, launch, guide, and maneuver highly reliable unmanned spacecraft with great accuracy over distances of hundreds of millions of miles, and bring back useful and important information.

From nearer the Earth, with our unmanned scientific satellites, we have returned to Earth and delivered to our scientists more scientific data in a single year than in the entire previous history of the space program. The use of NASA launch vehicles and spacecraft enables scientists who have the best ideas for new experiments to develop those ideas with assurance that at the proper time they will be able to send their instruments to the precise locations in space where they believe measurements should be made.

The NASA-university-industry team has, in 1965, demonstrated again, by a wide variety of new discoveries, that scientific data that can only be obtained in space is providing an entirely new understanding of the properties of the environment through which the Earth moves and of many of

the Earth-Sun relationships which have a profound influence on the Earth itself.

In our programs to apply what we have learned in space to help solve major problems facing mankind on Earth, we have completed the development of the world's first operational weather satellite. With ESSA I and ESSA II, launched by NASA for the Weather Bureau of the Commerce Department's Environmental Sciences Services Administration, we are inauguarating regular meteorological satellite operations and demonstrating a major practical use of space technology. In the communications field, we have seen the results of our pioneering with Telstar, Relay and Syncom demonstrated in commercial operation by the Communications Satellite Corporation's Early Bird.

In less noticed but equally significant work on or near the ground, we have demonstrated many things, including:

-- The soundness of the design of the giant Saturn V launch vehicle which will carry our astronauts to the Moon. All three propulsion stages have been tested at full power.

-- The feasibility of advanced propulsion systems for future vehicles. We have

had successful firings of the 260-inch large solid rocket motor. We have had successful ground tests of the NERVA nuclear rocket engine.

-- The use of our knowledge of testing in the air to simulate conditions the lunar landing vehicle will encounter in landing on the Moon, and successful flight testing of the Apollo abort system with the Little Joe rocket.

-- The use of ground simulators to investigate and solve flight problems associated with proposed designs of the supersonic transport.

Finally, we have demonstrated progress toward the establishment of a system of management that brings all our strengths, and those of our associates in industry and universities, into a coordinated, hard driving, versatile organization for aeronautical and space research built on a true partnership of these three elements.

Last November and December, the world had a public demonstration of how this partnership can react quickly in

adverse circumstances and turn failure into success. When the Agena target vehicle for Gemini 6 failed, quick decision-making and effective follow-through by the NASA-Air Force-Industry launch team resulted less than two months later in the success of the Gemini 6/Gemini 7 rendezvous. This clearly showed that we are not the slaves of the weaknesses of our machines but that we have the organization, control, and imagination to recombine, redirect, and utilize the elements of complex plans and equipment to meet suddenly changed conditions. The capability now in NASA which may well mean the most is that which enabled us to turn what in October seemed a severe loss into a profit for the program in December. Thousands of men and women put in tens of thousands of hours of work around the clock to accomplish this. But without strong organization and good leadership, such dedication would not have produced the result the program needed.

All in all, what this means to our Nation, and to other nations, is that we have demonstrated that we can do the tasks we set out to do. An important value of the space program is this demonstration of national capability in science and technology. That we have this capability is no longer a matter of opinion but a demonstrated fact that is clear to

all who concern themselves with the power nations can and do develop for many purposes from the mastery of a new environment or a new technology. We have put it on view for all the world to see. The world knows today that the United States can digest the space-related problems of long lead-times, can hold its position in a demanding competition, and can forge ahead simultaneously in both aeronautics and space and in those advanced technologies of which space is the leading symbol.

A striking example of how the position we have achieved in space can contribute to objectives of the greatest importance in the international field was President Johnson's proposal to Chancellor Erhard in January for a major new program of cooperation in space technology between the United States and the nations of Western Europe. The possibility is now open for the European nations to use the knowledge they have already gained, by their own efforts in the European Space Research Organization (ESRO) and through cooperative efforts with NASA, to undertake large projects in spacecraft technology which generally appear too big for any one nation. The idea under discussion is that through the development and production, at their expense, of a large

spacecraft -- perhaps a probe to Jupiter or a vehicle for solar research -- which we would launch for them, they could gain for scientists in their universities and engineers and workers in their industries an ability in the main fast-moving fields of science and technology that would serve many of their present and future needs.

It is too early to know how the President's proposal will be received and acted on, but an advance NASA-State Department team is just now returning from preliminary discussions with the Germans, the British, the French, the Dutch, the Italians, and ESRO. In this matter, the Administration is moving very carefully and, of course, we in NASA are acting in full concert with other departments and agencies. Also, we are fully conscious of your own interests and responsibilities in such an undertaking.

President Johnson feels that all mankind will be able to live in a better world tomorrow if we can find a way to use an expansion of the scientific exploration of space and the cooperative international development of non-military space technology to provide a new basis for cohesion, for a concert of some areas of policy to better serve many areas of common international interests. NASA already has, in our

present programs with 69 nations and several international organizations, a strong and successful base for further international cooperation in space. It may be possible, in line with the President's new proposal, that certain of the nations of Western Europe may wish to undertake and finance cooperative projects much larger and more advanced than any they have heretofore thought possible -- projects which would require and generate within their national universities, industries, and laboratories, a considerable expansion of science and technology of a very advanced sort. There is a growing understanding, both in Europe and in this country, that if the European community is to continue to be economically strong and competitive, it will have to find some way to make a major effort in the years immediately ahead to develop its own indigenous and self-renewing competence in the fields of advanced science and technology which are characteristic of the space program and are moving ahead by leaps and bounds in the United States and, undoubtedly, in the Soviet Union.

This leads to a few words about the relation of all of this to the Russian space program. They too have had an extremely active and, as far as we can tell, highly successful year. In 1965 they launched 50 Cosmos satellites,

about as many as in their entire program prior to that time. They successfully flew a three-man spacecraft, the Voskhod. They have placed two Molniya communications satellites in orbit and demonstrated their effectiveness. They have two spacecraft on the way to Venus. They launched two Proton satellites, the heaviest in the world to date, revealing a new launch vehicle with capabilities about double those of the booster they have used up to now. They have now achieved a soft lunar landing, after a number of attempts that ended in failure.

On the basis of this record and such other evidence as is available, it should now be entirely clear that the Soviets have a continuing major commitment to a long-term, large-scale program in space. All signs indicate that we will be seeing more and larger Soviet operations in space this year. Considering all the evidence, there is little room for doubt that their program does, or certainly could, include an attempt to land men on the Moon and plans for a large number of manned and unmanned flights in earth orbit.

More important to us than any other indication from Soviet space activity is the clear commitment to a long-term effort. The fact that they are making such a commitment shows

the importance they attach to advancing their capabilities in space. Unless we soon decide to follow through with a strong program in the years after we have achieved a manned lunar landing, we cannot avoid a gap in our flight schedule while they forge ahead as the unchallenged contestant in the field.

In my view, whether the successful organization, NASA, which we have built can or will be permitted to meet this challenge is the main question with which this Committee must wrestle as it takes up the 1967 Budget. Support for NASA for the coming year, as represented by your actions on the FY 1967 Budget recommendations, will not be the end of a struggle to maintain a forward thrusting policy and action program in aeronautics and space. The 1967 Budget is characterized by a Presidential determination to hold open for another year decisions on the future of the program -- decisions which cannot be delayed beyond the period of the FY 1968 Budget. The programs we are now carrying out so successfully, the new knowledge we are acquiring so rapidly, the ending of the period of uncertainty as to what both Russian Cosmonauts and American Astronauts can achieve in space, and the growing utilization of the long-term values

that our investments have created in reliable launch vehicles, spacecraft and assembly test and launch complexes, all point toward decisions to use rather than to lose the values we have worked so hard and spent so much to create. And so I believe that our presentation of this 1967 Budget marks not just our assertion to you that we have built well as we have created a foundation for space power, but also marks the beginning of a momentous era in which we must decide how we will use this power in future years.

I am confident that with adequate support this year, and in the years to come, we can hold and use this power for the benefit of Americans and all mankind. With your permission, I would like to call on Dr. Seamans to present the requested authorizations and supporting information.